10/618,095

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Kristofer J. James et al.

Examiner: Tibbits, Pia

Patent No.: 7,239,146

Group Art Unit: 2838

Issue Date: July 3, 2007

Docket No: 279.645US1

Title: INDICATOR OF REMAINING ENERGY IN STORAGE CELL OF IMPLANTABLE MEDICAL DEVICE

Commissioner for Patents
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ATTN: CERTIFICATE OF CORRECTION BRANCH

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SCHWEGMAN, LUNDBERG & WOESSNER, P.A.
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By: _____
Name: Suneel Arora
Reg. No.42,267
SA:CMG:raq

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Alysha Kramber
Name

Alysha Kramber
Signature

IN UNITED STATES PATENT AND TRADEMARK OFFICE

Patent No.:	7,239,146	Docket No:	279.645US1
Issue Date:	July 3, 2007	Patentee:	Kristofer J. James et al.
Customer No.:	21186	Confirmation No.:	3840
Title	INDICATOR OF REMAINING ENERGY IN STORAGE CELL OF IMPLANTABLE MEDICAL DEVICE		

REQUEST FOR CERTIFICATE OF CORRECTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
ATTN: CERTIFICATE OF CORRECTION BRANCH

It is requested that a Certificate of Correction be issued correcting printing errors appearing in the above-identified United States patent. Two copies of the text of the Certificate in the suggested form are enclosed.

Issuance of the Certificate of Correction would neither expand nor contract the scope of the claims as properly allowed, and re-examination is not required.

As the error is that of the Patent Office, it is believed that no fee is due.

The Examiner is authorized to charge any additional fees or credit overpayment to Deposit Account No.19-0743.

Respectfully Submitted,

SCHWEGMAN, LUNDBERG & WOESSNER, P.A
P.O. Box 2938
Minneapolis, MN 55402
(612) 373-6900

Date: Dec. 11, 2007

By: _____

Suneel Arora
Reg. No: 42,267
SA:raq

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Alysha Kramber
Name

Alysha Kramber
Signature

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 7,239,146

DATED : July 3, 2007

INVENTOR(S) : James et al.

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 11, line 13, below "the cell."
insert - - 18. A system comprising:
an energy storage cell;
a current source/sink circuit, coupled to the cell, to draw a substantially constant first current pulse;
a voltage measurement circuit, coupled to the cell, to measure first and second voltages during the first current pulse;
means for measuring a first change of a terminal voltage across the cell during the first time period, in which the measuring the first change of the terminal voltage comprises measuring a polarization angle;
a difference circuit, coupled to the voltage measurement circuit, to compute a difference between the first and second voltages; and
a processor circuit, coupled to or including the difference circuit, the processor circuit including a memory circuit to store first data relating cell capacity to the difference between the first and second voltages, the memory circuit also including a cell capacity indicator storage location to provide an indication of cell capacity, the processor configured to use the difference between the first and second voltages obtained from the difference circuit and the polarization angle and the stored first data indicative of cell capacity to provide the indication of cell capacity.

19. The system of claim 18, in which the energy storage cell comprises a manganese dioxide battery cell.

20. The system of claim 18, in which the energy storage cell comprises a silver vanadium oxide cell.

21. The system of claim 18, in which the voltage measurement circuit is also configured to measure a quiescent voltage.

22. The system of claim 21, in which the processor is configured to compare the measured quiescent voltage to a predetermined threshold to distinguish between two different stored cell capacity values that correspond to a single difference in terminal voltage across the cell.

MAILING ADDRESS OF SENDER:

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P.O. BOX 2938
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Atty Docket No: 279.645US1

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(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO : 7,239,146

DATED : July 3, 2007

INVENTOR(S) : James et al.

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

23. The system of claim 21, in which the memory circuit is also configured to store second data relating cell capacity to the quiescent voltage, and in which the processor is configured to compare the measured quiescent voltage to the second data to determine the energy remaining in the cell.

24. The system of claim 23, in which the processor is configured to determine the energy remaining in the cell using the difference, during an earlier portion of a life of the cell,
and using the measured quiescent voltage, during the later portion of a life of the cell.

25. The system of claim 18, in which the processor is configured to compare first and second differences to distinguish between two different stored first data values that correspond to a single stored difference.

26. The system of claim 18, in which the processor is located within an implantable medical device.

27. The system of claim 18, in which the processor is located within an external remote interface device.

In column 12, line 1, in claim 18, delete "18." and insert - - 28. - -, therefor.

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CERTIFICATE OF CORRECTION

PATENT NO : 7,239,146 Page (1) of 2

DATED : July 3, 2007

INVENTOR(S) : James et al.

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In column 11, line 13, below "the cell."
insert - - 18. A system comprising:
an energy storage cell;
a current source/sink circuit, coupled to the cell, to draw a substantially constant first current pulse;
a voltage measurement circuit, coupled to the cell, to measure first and second voltages during the first current pulse;
means for measuring a first change of a terminal voltage across the cell during the first time period, in which the measuring the first change of the terminal voltage comprises measuring a polarization angle;
a difference circuit, coupled to the voltage measurement circuit, to compute a difference between the first and second voltages; and
a processor circuit, coupled to or including the difference circuit, the processor circuit including a memory circuit to store first data relating cell capacity to the difference between the first and second voltages, the memory circuit also including a cell capacity indicator storage location to provide an indication of cell capacity, the processor configured to use the difference between the first and second voltages obtained from the difference circuit and the polarization angle and the stored first data indicative of cell capacity to provide the indication of cell capacity.

19. The system of claim 18, in which the energy storage cell comprises a manganese dioxide battery cell.

20. The system of claim 18, in which the energy storage cell comprises a silver vanadium oxide cell.

21. The system of claim 18, in which the voltage measurement circuit is also configured to measure a quiescent voltage.

22. The system of claim 21, in which the processor is configured to compare the measured quiescent voltage to a predetermined threshold to distinguish between two different stored cell capacity values that correspond to a single difference in terminal voltage across the cell.

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24. The system of claim 23, in which the processor is configured to determine the energy remaining in the cell using the difference, during an earlier portion of a life of the cell,
and using the measured quiescent voltage, during the later portion of a life of the cell.

25. The system of claim 18, in which the processor is configured to compare first and second differences to distinguish between two different stored first data values that correspond to a single stored difference.

26. The system of claim 18, in which the processor is located within an implantable medical device.

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